

WHAT IS CLAIMED IS:

1. An active matrix display device comprising:
  - a display medium interposed between a pair of substrates;
  - 5 a plurality of signal lines and a plurality of scan lines, each supported by one of the pair of substrates and intersecting each other;
  - a plurality of pixel electrodes supported by the one of the pair of substrates and arranged in matrix;
  - a counter electrode supported by the other of the pair of substrates and
  - 10 interposing the display medium between the pixel electrodes;
  - a plurality of pairs of memory circuits, each provided between each of the pixel electrodes and a corresponding one of the signal lines, wherein each pair of memory circuits comprises a first memory circuit connected to the corresponding signal line and a second memory circuit connected to the
  - 15 corresponding pixel electrode, and either of two different potentials is supplied to the corresponding pixel electrode depending on a state of the second memory circuit;
  - a plurality of first switches, each connected between a corresponding first memory circuit and a corresponding signal line, which are selectively turned
  - 20 on by a selective signal from a corresponding scan line and which enable to write data on the corresponding signal line to the corresponding first memory circuit;
  - a plurality of second switches, each connected between a corresponding first memory circuit and a corresponding second memory circuit, which enable to transfer data from the corresponding first memory circuit to the corresponding
  - 25 second memory circuit when turned on;
  - at least one transfer control line for supplying a transfer signal which selectively turns the second switches on; and
  - a transfer control line driver circuit for driving the transfer control line.

2. An active matrix display device comprising:

- a display medium interposed between a pair of substrates;
- a plurality of signal lines and a plurality of scan lines, each supported by one of the pair of substrates and intersecting each other;
- 5 a signal line driver circuit for driving the plurality of signal lines;
- a scan line driver circuit for driving the plurality of scan lines;
- a plurality of pixel electrodes supported by the one of the pair of substrates and arranged in matrix;
- a counter electrode supported by the other of the pair of substrates and
- 10 interposing the display medium between the pixel electrodes;
- a plurality of pairs of memory circuits, each provided between each of the pixel electrodes and a corresponding one of the signal lines, wherein each pair of memory circuits comprises a first memory circuit connected to the corresponding signal line and a second memory circuit connected to the
- 15 corresponding pixel electrode, and either of two different potentials is supplied to the corresponding pixel electrode depending on a state of the second memory circuit;
- a plurality of first switches, each connected between a corresponding first memory circuit and a corresponding signal line, which are selectively turned
- 20 on by a selective signal from a corresponding scan line and which enable to write data on the corresponding signal line to the corresponding first memory circuit;
- a plurality of second switches, each connected between a corresponding first memory circuit and a corresponding second memory circuit, which enable to transfer data from the corresponding first memory circuit to the corresponding
- 25 second memory circuit when turned on;
- at least one transfer control line for supplying a transfer signal which selectively turns the second switches on; and
- a transfer control line driver circuit for driving the transfer control line, wherein a plurality of the pixel electrodes are allocated to each pixel;

the signal lines are provided so as to be equal in number to the pixel electrodes included in one horizontal line; and

each of the plurality of first switches corresponding to a plurality of the pixel electrodes allocated to each pixel is connected to a corresponding signal line.

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3. An active matrix display device according to claim 2, wherein the signal line driver circuit comprises as many latch circuits as a plurality of pixel electrodes included in one horizontal line in order to store data corresponding to the plurality of pixel electrodes; and

10 each of the signal lines is connected to a corresponding one of the plurality of latch circuits.

4. An active matrix display device comprising:

a display medium interposed between a pair of substrates;

15 a plurality of signal lines and a plurality of scan lines, each supported by one of the pair of substrates and intersecting each other;

a signal line driver circuit for driving the plurality of signal lines;

a scan line driver circuit for driving the plurality of scan lines;

20 a plurality of pixel electrodes supported by the one of the pair of substrates and arranged in matrix;

a counter electrode supported by the other of the pair of substrates and interposing the display medium between the pixel electrodes;

a plurality of pairs of memory circuits, each provided between each of the pixel electrodes and a corresponding one of the signal lines, wherein each pair  
25 of memory circuits comprises a first memory circuit connected to the corresponding signal line and a second memory circuit connected to the corresponding pixel electrode, and either of two different potentials is supplied to the corresponding pixel electrode depending on a state of the second memory circuit;

a plurality of first switches, each connected between a corresponding first memory circuit and a corresponding signal line, which are selectively turned on by a selective signal from a corresponding scan line and which enable to write data on the corresponding signal line to the corresponding first memory circuit;

5 a plurality of second switches, each connected between a corresponding first memory circuit and a corresponding second memory circuit, which enable to transfer data from the corresponding first memory circuit to the corresponding second memory circuit when turned on;

at least one transfer control line for supplying a transfer signal which  
10 selectively turns the second switches on; and

a transfer control line driver circuit for driving the transfer control line, wherein a plurality of the pixel electrodes are allocated to each pixel;

the signal lines are provided so as to be equal in number to the pixel electrodes included in one horizontal line;

15 a plurality of the first switches corresponding to a plurality of the pixel electrodes allocated to each pixel are connected to one of the signal lines; and

a plurality of the first switches corresponding to a plurality of the pixel electrodes allocated to each pixel are connected to different scan lines.

20 5. An active matrix display device according to claim 4, wherein the signal line driver circuit comprises a plurality of latch circuits for storing data corresponding to a plurality of pixel electrodes allocated to each pixel included in one horizontal line, and as many selective switches as the signal lines, which are provided between the latch circuits and the signal lines in order to select data to be  
25 transferred to the signal lines among data stored in the latch circuits.

6. An active matrix display device according to any one of claims 4 and 5, wherein a plurality of pixel electrodes allocated to each pixel are arranged parallel to the signal lines.

7. An active matrix display device comprising:  
a display medium interposed between a pair of substrates;  
a plurality of signal lines and a plurality of scan lines, each supported by  
5 one of the pair of substrates and intersecting each other;  
a plurality of pixel electrodes supported by the one of the pair of  
substrates and arranged in matrix;  
a counter electrode supported by the other of the pair of substrates and  
interposing the display medium between the pixel electrodes;  
10 a plurality of pairs of memory circuits, each provided between each of  
the pixel electrodes and a corresponding one of the signal lines, wherein each pair  
of memory circuits comprises a first memory circuit connected to the  
corresponding signal line and a second memory circuit connected to the  
corresponding pixel electrode, and either of two different potentials is supplied to  
15 the corresponding pixel electrode depending on a state of the second memory  
circuit;  
a plurality of first switches, each connected between a corresponding  
first memory circuit and a corresponding signal line, which are selectively turned  
on by a selective signal from a corresponding scan line and which enable to write  
20 data on the corresponding signal line to the corresponding first memory circuit;  
a plurality of second switches, each connected between a corresponding  
first memory circuit and a corresponding second memory circuit, which enable to  
transfer data from the corresponding first memory circuit to the corresponding  
second memory circuit when turned on;  
25 at least one transfer control line for supplying a transfer signal which  
selectively turns the second switches on; and  
a transfer control line driver circuit for driving the transfer control line,  
wherein a plurality of the pixel electrodes are allocated to each pixel and  
an area gray scale is used in the display device.

8. An active matrix display device comprising:  
a display medium interposed between a pair of substrates;  
a plurality of signal lines and a plurality of scan lines, each supported by  
5 one of the pair of substrates and intersecting each other;  
a signal line driver circuit for driving the plurality of signal lines;  
a scan line driver circuit for driving the plurality of scan lines;  
a plurality of pixel electrodes supported by the one of the pair of  
substrates and arranged in matrix;  
10 a counter electrode supported by the other of the pair of substrates and  
interposing the display medium between the pixel electrodes;  
a plurality of pairs of memory circuits, each provided between each of  
the pixel electrodes and a corresponding one of the signal lines, wherein each pair  
of memory circuits comprises a first memory circuit connected to the  
15 corresponding signal line and a second memory circuit connected to the  
corresponding pixel electrode, and either of two different potentials is supplied to  
the corresponding pixel electrode depending on a state of the second memory  
circuit;  
a plurality of first switches, each connected between a corresponding  
20 first memory circuit and a corresponding signal line, which are selectively turned  
on by a selective signal from a corresponding scan line and which enable to write  
data on the corresponding signal line to the corresponding first memory circuit;  
a plurality of second switches, each connected between a corresponding  
first memory circuit and a corresponding second memory circuit, which enable to  
25 transfer data from the corresponding first memory circuit to the corresponding  
second memory circuit when turned on;  
at least one transfer control line for supplying a transfer signal which  
selectively turns the second switches on; and  
a transfer control line driver circuit for driving the transfer control line,

wherein a plurality of the pixel electrodes are allocated to each pixel;  
the signal lines are provided so as to be equal in number to the pixel  
electrodes included in one horizontal line;

each of the plurality of first switches corresponding to a plurality of the  
5 pixel electrodes allocated to each pixel is connected to a corresponding signal line;  
and

an area gray scale is used in the display device.

9. An active matrix display device comprising:

10 a display medium interposed between a pair of substrates;

a plurality of signal lines and a plurality of scan lines, each supported by  
one of the pair of substrates and intersecting each other;

a signal line driver circuit for driving the plurality of signal lines;

a scan line driver circuit for driving the plurality of scan lines;

15 a plurality of pixel electrodes supported by the one of the pair of  
substrates and arranged in matrix;

a counter electrode supported by the other of the pair of substrates and  
interposing the display medium between the pixel electrodes;

a plurality of pairs of memory circuits, each provided between each of  
20 the pixel electrodes and a corresponding one of the signal lines, wherein each pair  
of memory circuits comprises a first memory circuit connected to the  
corresponding signal line and a second memory circuit connected to the  
corresponding pixel electrode, and either of two different potentials is supplied to  
the corresponding pixel electrode depending on a state of the second memory  
25 circuit;

a plurality of first switches, each connected between a corresponding  
first memory circuit and a corresponding signal line, which are selectively turned  
on by a selective signal from a corresponding scan line and which enable to write  
data on the corresponding signal line to the corresponding first memory circuit;

a plurality of second switches, each connected between a corresponding first memory circuit and a corresponding second memory circuit, which enable to transfer data from the corresponding first memory circuit to the corresponding second memory circuit when turned on;

5           at least one transfer control line for supplying a transfer signal which selectively turns the second switches on; and

a transfer control line driver circuit for driving the transfer control line, wherein a plurality of the pixel electrodes are allocated to each pixel;

the signal lines are provided so as to be equal in number to the pixel  
10 electrodes included in one horizontal line;

a plurality of the first switches corresponding to a plurality of the pixel electrodes allocated to each pixel are connected to one of the signal lines;

a plurality of the first switches corresponding to a plurality of the pixel electrodes allocated to each pixel are connected to different scan lines; and

15           an area gray scale is used in the display device.

10. An active matrix display device according to any one of claims 1, 2, 4 and 7-9, wherein the matrix display device comprises a first period for turning the first switches on and writing data to the first memory circuits, and a second  
20 period for turning the second switches on and transferring data from the each of the first memory circuits to a corresponding one of the second memory circuits, after writing data to each of the first memory circuits in the first period; and

a potential of the counter electrode is switched between a first potential and a second potential in the second period.

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11. An active matrix display device according to claim 10, wherein the second period comprises a fly-back period of an image signal.

12. An active matrix display device according to claim 11, wherein a



potential of the counter electrode is switched per frame of an image signal.

13. An active matrix display device according to claim 12, wherein one of two different potentials supplied to a corresponding pixel electrode through the  
5 second memory circuit is substantially equal to the first potential, and the other is substantially equal to the second potential.

14. An active matrix display device according to any one of claims 1, 2, 4 and 7-9, wherein the first switch and the second switch comprise a thin film  
10 transistor, the first memory circuit and the second memory circuit comprise an SRAM or a DRAM, each having a thin film transistor.

15. An active matrix display device according to claim 1, further comprising a signal line driver circuit for driving the plurality of signal lines, a  
15 scan line driver circuit for driving the plurality of scan lines, and a logic circuit, wherein the signal line driver circuit, the scan line driver circuit, the transfer control line driver circuit, the first and second memory circuits, the first and second switches, and the logic circuit comprise a same type of thin film transistor.

20 16. An active matrix display device according to any one of claims 2, 4 and 7-9, further comprising a logic circuit, wherein the signal line driver circuit, the scan line driver circuit, the transfer control line driver circuit, the first and second memory circuits, the first and second switches, and the logic circuit comprise a same type of thin film transistor.

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17. An active matrix display device according to claim 15, wherein the logic circuit comprises a controller for controlling timings of the signal line driver circuit, the scan line driver circuit and the transfer control line driver circuit.

18. An active matrix display device according to claim 15, wherein the logic circuit includes a CPU.

19. An active matrix display device according to claim 15, wherein the  
5 logic circuit includes an image processing circuit.

20. An active matrix display device according to claim 16, wherein the logic circuit comprises a controller for controlling timings of the signal line driver circuit, the scan line driver circuit and the transfer control line driver circuit.

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21. An active matrix display device according to claim 16, wherein the logic circuit includes a CPU.

22. An active matrix display device according to claim 16, wherein the  
15 logic circuit includes an image processing circuit.

23. An active matrix display device according to any one of claims 1, 2 and 4, wherein digital gray scale is used in the display device.

20 24. An active matrix display device according to any one of claims 1, 2, 4 and 7-9, wherein the transfer control line is arranged substantially parallel to the signal lines.

25 25. An active matrix display device according to any one of claims 1, 2, 4 and 7-9, wherein the transfer control line is arranged substantially perpendicular to the signal lines.

26. An active matrix display device according to any one of claims 1, 2, 4 and 7-9, further comprising a plurality of the transfer control lines, wherein the

transfer control lines are divided into a plurality of groups, and the transfer signal is supplied to each of the groups with different timing.

27. An active matrix display device according to any one of claims 1, 2,  
5 4 and 7-9, wherein the display medium comprises a liquid crystal.

28. An active matrix display device according to any one of claims 7 to  
9, wherein k (k is an integer of 2 or more) pixel electrodes are allocated to each of  
the pixels, and the area ratio between the pixel electrodes is  $1 : 2 : 4 \dots : 2^{k-1}$  as the  
10 basis of the minimum pixel electrode area.

29. Electronic equipment comprising an active matrix display device  
according to any one of claims 1, 2, 4 and 7-9.

15 30. A driving method of an active matrix display device comprising a  
display medium interposed between a pair of substrates,

wherein the active matrix display device comprises:

a plurality of signal lines and a plurality of scan lines, each supported by  
one of the pair of substrates and intersecting each other;

20 a plurality of pixel electrodes supported by the one of the pair of  
substrates and arranged in matrix;

a counter electrode supported by the other of the pair of substrates and  
interposing the display medium between the pixel electrodes;

a plurality of pairs of memory circuits, each provided between each of  
25 the pixel electrodes and a corresponding one of the signal lines, wherein each pair  
of memory circuits comprises a first memory circuit connected to the  
corresponding signal line and a second memory circuit connected to the  
corresponding pixel electrode, and either of two different potentials is supplied to  
the corresponding pixel electrode depending on a state of the second memory

circuit;

a plurality of first switches, each connected between a corresponding first memory circuit and a corresponding signal line, which are selectively turned on by a selective signal from a corresponding scan line and which enable to write  
5 data on the corresponding signal line to the corresponding first memory circuit;

a plurality of second switches, each connected between a corresponding first memory circuit and a corresponding second memory circuit, which enable to transfer data from the corresponding first memory circuit to the corresponding second memory circuit when turned on;

10 at least one transfer control line for supplying a transfer signal which selectively turns the second switches on; and

a transfer control line driver circuit for driving the transfer control line, wherein the driving method comprises the steps of:

turning the first switches on and writing data to the first memory circuits  
15 in a first period;

turning the second switches on and transferring data from the first memory circuits to a corresponding one of the second memory circuits in a second period, after writing data to each of the first memory circuits in the first period; and

20 switching a potential of the counter electrode between a first potential and a second potential in the second period.

31. A driving method of an active matrix display device comprising a display medium interposed between a pair of substrates,

25 wherein the active matrix display device comprises:

a plurality of signal lines and a plurality of scan lines, each supported by one of the pair of substrates and intersecting each other;

a plurality of pixel electrodes supported by the one of the pair of substrates and arranged in matrix;

a counter electrode supported by the other of the pair of substrates and interposing the display medium between the pixel electrodes;

a plurality of pairs of memory circuits, each provided between each of the pixel electrodes and a corresponding one of the signal lines, wherein each pair  
5 of memory circuits comprises a first memory circuit connected to the corresponding signal line and a second memory circuit connected to the corresponding pixel electrode, and either of two different potentials is supplied to the corresponding pixel electrode depending on a state of the second memory circuit;

10 a plurality of first switches, each connected between a corresponding first memory circuit and a corresponding signal line, which are selectively turned on by a selective signal from a corresponding scan line and which enable to write data on the corresponding signal line to the corresponding first memory circuit;

a plurality of second switches, each connected between a corresponding  
15 first memory circuit and a corresponding second memory circuit, which enable to transfer data from the corresponding first memory circuit to the corresponding second memory circuit when turned on;

at least one transfer control line for supplying a transfer signal which selectively turns the second switches on; and

20 a transfer control line driver circuit for driving the transfer control line, wherein the driving method comprises the steps of:

turning the first switches on and writing data to the first memory circuits in a first period;

turning the second switches on and transferring data from the first  
25 memory circuits to a corresponding one of the second memory circuits in a second period, after writing data to each of the first memory circuits in the first period; and

switching a potential of the counter electrode between a first potential and a second potential in the second period,

wherein the second period comprises a fly-back period of an image signal.

32. A driving method of an active matrix display device, according to  
5 any one of claims 30 and 31, wherein a potential of the counter electrode is switched per frame of an image signal.

33. A driving method of an active matrix display device comprising a display medium interposed between a pair of substrates,  
10 wherein the active matrix display device comprises:  
a plurality of signal lines and a plurality of scan lines, each supported by one of the pair of substrates and intersecting each other;  
a plurality of pixel electrodes supported by the one of the pair of substrates and arranged in matrix;  
15 a counter electrode supported by the other of the pair of substrates and interposing the display medium between the pixel electrodes;  
a plurality of pairs of memory circuits, each provided between each of the pixel electrodes and a corresponding one of the signal lines, wherein each pair of memory circuits comprises a first memory circuit connected to the  
20 corresponding signal line and a second memory circuit connected to the corresponding pixel electrode, and either of two different potentials is supplied to the corresponding pixel electrode depending on a state of the second memory circuit;  
a plurality of first switches, each connected between a corresponding  
25 first memory circuit and a corresponding signal line, which are selectively turned on by a selective signal from a corresponding scan line and which enable to write data on the corresponding signal line to the corresponding first memory circuit;  
a plurality of second switches, each connected between a corresponding first memory circuit and a corresponding second memory circuit, which enable to

transfer data from the corresponding first memory circuit to the corresponding second memory circuit when turned on;

at least one transfer control line for supplying a transfer signal which selectively turns the second switches on; and

5 a transfer control line driver circuit for driving the transfer control line, wherein the driving method comprises the steps of:

turning the first switches on and writing data to the first memory circuits in a first period;

turning the second switches on and transferring data from the first  
10 memory circuits to a corresponding one of the second memory circuits in a second period, after writing data to each of the first memory circuits in the first period; and

switching a potential of the counter electrode between a first potential and a second potential in the second period,

15 wherein a plurality of the pixel electrodes are allocated to each pixel and each of the pixel electrodes has a corresponding liquid crystal cell; and

an area gray scale is used in the display device by changing a combination of liquid crystal cells which transmit light in each pixel.

20 34. A driving method of an active matrix display device comprising a display medium interposed between a pair of substrates,

wherein the active matrix display device comprises:

a plurality of signal lines and a plurality of scan lines, each supported by one of the pair of substrates and intersecting each other;

25 a plurality of pixel electrodes supported by the one of the pair of substrates and arranged in matrix;

a counter electrode supported by the other of the pair of substrates and interposing the display medium between the pixel electrodes;

a plurality of pairs of memory circuits, each provided between each of

the pixel electrodes and a corresponding one of the signal lines, wherein each pair of memory circuits comprises a first memory circuit connected to the corresponding signal line and a second memory circuit connected to the corresponding pixel electrode, and either of two different potentials is supplied to  
5 the corresponding pixel electrode depending on a state of the second memory circuit;

a plurality of first switches, each connected between a corresponding first memory circuit and a corresponding signal line, which are selectively turned on by a selective signal from a corresponding scan line and which enable to write  
10 data on the corresponding signal line to the corresponding first memory circuit;

a plurality of second switches, each connected between a corresponding first memory circuit and a corresponding second memory circuit, which enable to transfer data from the corresponding first memory circuit to the corresponding second memory circuit when turned on;

15 at least one transfer control line for supplying a transfer signal which selectively turns the second switches on; and

a transfer control line driver circuit for driving the transfer control line, wherein the driving method comprises the steps of:

turning the first switches on and writing data to the first memory circuits  
20 in a first period;

turning the second switches on and transferring data from the first memory circuits to a corresponding one of the second memory circuits in a second period, after writing data to each of the first memory circuits in the first period; and

25 switching a potential of the counter electrode between a first potential and a second potential in the second period,

wherein the second period comprises a fly-back period;

a plurality of the pixel electrodes are allocated to each pixel and each of the pixel electrodes has a corresponding liquid crystal cell; and



an area gray scale is used in the display device by changing a combination of liquid crystal cells which transmit light in each pixel.

35. A driving method of an active matrix display device comprising a  
5 display medium interposed between a pair of substrates,

wherein the active matrix display device comprises:

a plurality of signal lines and a plurality of scan lines, each supported by one of the pair of substrates and intersecting each other;

a plurality of pixel electrodes supported by the one of the pair of  
10 substrates and arranged in matrix;

a counter electrode supported by the other of the pair of substrates and interposing the display medium between the pixel electrodes;

a plurality of pairs of memory circuits, each provided between each of the pixel electrodes and a corresponding one of the signal lines, wherein each pair  
15 of memory circuits comprises a first memory circuit connected to the corresponding signal line and a second memory circuit connected to the corresponding pixel electrode, and either of two different potentials is supplied to the corresponding pixel electrode depending on a state of the second memory circuit;

20 a plurality of first switches, each connected between a corresponding first memory circuit and a corresponding signal line, which are selectively turned on by a selective signal from a corresponding scan line and which enable to write data on the corresponding signal line to the corresponding first memory circuit;

a plurality of second switches, each connected between a corresponding  
25 first memory circuit and a corresponding second memory circuit, which enable to transfer data from the corresponding first memory circuit to the corresponding second memory circuit when turned on;

at least one transfer control line for supplying a transfer signal which selectively turns the second switches on; and

a transfer control line driver circuit for driving the transfer control line,  
wherein the driving method comprises the steps of:  
turning the first switches on and writing data to the first memory circuits  
in a first period;  
5 turning the second switches on and transferring data from the first  
memory circuits to a corresponding one of the second memory circuits in a second  
period, after writing data to each of the first memory circuits in the first period;  
and  
switching a potential of the counter electrode between a first potential  
10 and a second potential in the second period,  
wherein a potential of the counter electrode is switched per frame of an  
image signal;  
a plurality of the pixel electrodes are allocated to each pixel and each of  
the pixel electrodes has a corresponding liquid crystal cell; and  
15 an area gray scale is used in the display device by changing a  
combination of liquid crystal cells which transmit light in each pixel.

36. A driving method of an active matrix display device comprising a  
display medium interposed between a pair of substrates,  
20 wherein the active matrix display device comprises:  
a plurality of signal lines and a plurality of scan lines, each supported by  
one of the pair of substrates and intersecting each other;  
a plurality of pixel electrodes supported by the one of the pair of  
substrates and arranged in matrix;  
25 a counter electrode supported by the other of the pair of substrates and  
interposing the display medium between the pixel electrodes;  
a plurality of pairs of memory circuits, each provided between each of  
the pixel electrodes and a corresponding one of the signal lines, wherein each pair  
of memory circuits comprises a first memory circuit connected to the

corresponding signal line and a second memory circuit connected to the corresponding pixel electrode, and either of two different potentials is supplied to the corresponding pixel electrode depending on a state of the second memory circuit;

5           a plurality of first switches, each connected between a corresponding first memory circuit and a corresponding signal line, which are selectively turned on by a selective signal from a corresponding scan line and which enable to write data on the corresponding signal line to the corresponding first memory circuit;

          a plurality of second switches, each connected between a corresponding  
10 first memory circuit and a corresponding second memory circuit, which enable to transfer data from the corresponding first memory circuit to the corresponding second memory circuit when turned on;

          at least one transfer control line for supplying a transfer signal which selectively turns the second switches on; and

15           a transfer control line driver circuit for driving the transfer control line, wherein the driving method comprises the steps of:

          turning the first switches on and writing data to the first memory circuits in a first period;

          turning the second switches on and transferring data from the first  
20 memory circuits to a corresponding one of the second memory circuits in a second period, after writing data to each of the first memory circuits in the first period; and

          switching a potential of the counter electrode between a first potential and a second potential in the second period,

25           wherein the second period comprises a fly-back period;

          a potential of the counter electrode is switched per frame of an image signal;

          a plurality of the pixel electrodes are allocated to each pixel and each of the pixel electrodes has a corresponding liquid crystal cell; and

an area gray scale is used in the display device by changing a combination of liquid crystal cells which transmit light in each pixel.

37. A driving method of an active matrix display device according to  
5 any one of claims 33 to 36, wherein the signal lines are provided so as to be equal in number to the pixel electrodes included in one horizontal line;

a plurality of the first switches corresponding to a plurality of the pixel electrodes allocated to each pixel are connected to one of the signal lines; and

a plurality of the first switches corresponding to a plurality of the pixel  
10 electrodes allocated to each pixel are connected to different scan lines,

wherein the driving method comprises the steps of sequentially outputting to a corresponding signal line data for a plurality of the pixel electrodes allocated to each pixel, and turning on each of a plurality of the first switches allocated to each pixel by a signal from a corresponding scan line in synchronism  
15 with the data outputted to the signal lines.

38. A driving method of an active matrix display device, according to any one of claims 30, 31 and 33-36, wherein the active matrix display device comprises a plurality of transfer control lines, and the transfer control lines are  
20 divided into a plurality of groups; and

the driving method comprises the step of supplying the transfer signal to each of the groups with different timing.

39. A driving method of an active matrix display device according to  
25 any one of claims 30, 31 and 33-36, wherein image display is performed in the first period in accordance with data written to the second memory circuit in the preceding second period.